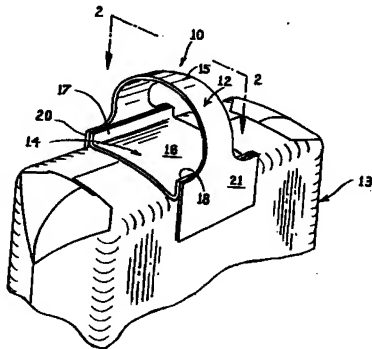




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁵ : B65D 33/10, B31B 19/86	A1	(11) International Publication Number: WO 91/04918 (43) International Publication Date: 18 April 1991 (18.04.91)
(21) International Application Number: PCT/CA90/00320 (22) International Filing Date: 26 September 1990 (26.09.90) (30) Priority data: 613,704 27 September 1989 (27.09.89) CA (71)(72) Applicant and Inventor: POKLUKAR, Josef, G. [CA/CA]; 520 Logan Street, St. Lambert, Quebec J4P 1J8 (CA). (74) Agent: MITCHELL, Robert; Swabey Ogilvy Renault, Suite 800, 1001 Boul. de Maisonneuve Ouest, Montreal, Quebec H3A 3C8 (CA).		(81) Designated States: AT (European patent), AU, BE (European patent), CA, CH (European patent), DE (European patent)*, DK (European patent), ES (European patent), FR (European patent), GB (European patent), IT (European patent), LU (European patent), NL (European patent), SE (European patent), US. Published <i>With international search report.</i> <i>With amended claims.</i>

(54) Title: BAG HANDLE



(57) Abstract

An elongated bow portion (15) has attachment portions (20, 21) extending from either end thereof. An elongated bridge portion (16) has flaps (17, 18) extending from either end thereof. The bridge portion (16) underlies the bow portion (15), and the flaps (17, 18) of the bridge portion (16) are attached to the underside of the bow portion (15). The bow portion (15) is longer than the corresponding bridge portion (16). The handle (12) is attached to a bag (13) or a box, by the attachment portions (20, 21).

DESIGNATIONS OF "DE"

Until further notice, any designation of "DE" in any international application whose international filing date is prior to October 3, 1990, shall have effect in the territory of the Federal Republic of Germany with the exception of the territory of the former German Democratic Republic.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	ES	Spain	MC	Morocco
AU	Australia	FI	Finland	MG	Madagascar
BB	Barbados	FR	France	ML	Mali
BE	Belgium	GA	Gabon	MR	Mauritania
BF	Burkina Faso	GB	United Kingdom	MW	Malawi
BG	Bulgaria	GR	Greece	NL	Netherlands
BJ	Benin	HU	Hungary	NO	Norway
BR	Brazil	IT	Italy	PL	Poland
CA	Canada	JP	Japan	RO	Romania
CF	Central African Republic	KP	Democratic People's Republic of Korea	SD	Sudan
CG	Congo	KR	Republic of Korea	SE	Sweden
CH	Switzerland	LI	Liechtenstein	SN	Senegal
CM	Cameroon	LK	Sri Lanka	SU	Soviet Union
DE	Germany	LJ	Luxembourg	TD	Chad
DK	Denmark			TG	Togo
				US	United States of America

- 1 -

BAG HANDLETECHNICAL FIELD

The invention relates to a handle which can be mounted on and used with a variety of different shaped containers. More specifically, the invention relates to such a handle which can be mounted on a manually portable container or package, either during the assembling of the container or after.

BACKGROUND ART

There exists a need for an inexpensive, attractive, and sturdy handle device which can be attached with relative ease to a large variety of differently shaped containers either during the construction of the carrier means or subsequently. The advantage of such a handle is that it would provide a low cost means of manually carrying packages filled with relatively heavy contents, with relative ease.

Prior art handles have associated with them various deficiencies. For example, they may be specialized in their construction and are, therefore, not applicable to a variety of differently shaped containers. In addition, when applied to a flexible wall container, they could withstand a simple lifting force but would be unable to resist a sideways pulling force without breaking or being detached from the container. Other handles are difficult to attach to a container, especially during the construction and manufacture of the carrier means.

Many containers, in particular multi-wall bags and shipping sacks, are made of considerable size for containing masses of considerable bulk and weight, for example, fluid material such as sugar, dog or cat food, fertilizer, powdered cement, etc. There is no

- 2 -

practical handle means provided on such bags, rendering them difficult and awkward to grasp and to carry about.

A handle which would be practical must preferably lie flat against the bag when not in use so as not to form an obstruction against close packing or stacking of the bags. Further, few of the prior art handles can be laminated or attached to paper or paperboard, thus making it difficult to incorporate such low cost material into the construction of the handles.

DISCLOSURE OF INVENTION

It is, therefore, an object of the invention to provide a handle which overcomes the disadvantages of the prior art handles.

It is a further object of the invention to provide a handle which can be mounted and used on a variety of differently shaped carriers.

It is a still further aim of the invention to provide such a handle means which can be mounted on a respective container either during the construction of the container or subsequently.

In accordance with the broad principles of the invention, the handle means comprises a single integral assembly formed of flexible material and so shaped that it can resist lifting or pulling forces from any direction and which can be attached to a large variety of differently shaped containers either during the construction of the container or subsequently.

The material of the handle means can comprise a film, web, layer, or string-like material.

In accordance with a particular embodiment, there is provided a handle means for use with a container means, wherein the handle means comprises a bow member having an elongated portion with an upper side and an underside and a first end and a second end. A

- 3 -

first attachment portion extends from the first end of the elongated portion and a second attachment portion extends from the second end of the elongated portion. A bridge member comprises an elongated portion having an upper side and an underside and having a first end and a second end. A first flap extends from the first end of said bridge elongated portion and a second flap extends from the second end of the bridge elongated portion. The bridge member underlies the bow member, and said first and second flaps are attached to the underside of said bow member at spaced-apart positions of said bow member. In the assembled condition, the elongated portion of the bridge member is shorter than the portion of the elongated portion of the bow member between the attachments of the first and second flaps. The first and second attachment portions being attachable to said container at spaced-apart positions thereof are limited in their spacing by the length of the bridge member.

There is also provided, in accordance with the invention, a method and an apparatus for manufacturing the handle means.

The handle means may be formed from a sturdy but flexible film, layer, web, or string-like plastic, such as polyethylene or polypropylene. The film may be a reinforced or unreinforced monofilm laminated to other plastic films or to paper.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be better understood by an examination of the following description, together with the accompanying drawings, in which:

Fig. 1 is a perspective view showing one form of the handle in accordance with the invention mounted on a container;

- 4 -

Fig. 2 is a cross-section taken through line 2-2 of Fig. 1;

Fig. 3 is a top plan view of a handle in accordance with another embodiment of the present invention;

Fig. 4 is a side elevation of the handle shown in Fig. 3;

Fig. 5 is a top plan view of still another embodiment of the present invention;

Fig. 6 is a side elevation of the handle shown in Fig. 5;

Fig. 7 is a perspective view of a flexible wall bag having gusseted side walls showing a handle in accordance with the embodiment of Figs. 3 and 4, applied to one end thereof;

Fig. 8 is a fragmentary enlarged cross-section taken along the line 8-8 of Fig. 7;

Fig. 9 is a perspective view of the gusseted bag shown in Fig. 7 but with the handle applied to a gusseted side thereof;

Fig. 10 is an enlarged fragmentary cross-section taken along the line 10-10 of Fig. 9;

Fig. 11 is a fragmentary perspective view showing the handle applied to a flexible bag having a stepped end construction;

Fig. 12 is a fragmentary enlarged cross-section taken along the line 12-12 of Fig. 11;

Fig. 13 is a side elevation similar to Figs. 4 and 5 but showing yet another embodiment of the handle of the present invention;

Fig. 14 is a side elevation of the handle shown in Fig. 13 but in an erected position;

Fig. 15 is a side elevation of yet another embodiment of the handle of the present invention;

- 5 -

Fig. 16 is a bottom plan view of the handle shown in Fig. 15;

Fig. 17 is a perspective view showing the handle of the present invention as applied to a rigid wall container;

Fig. 18 is a fragmentary perspective view of a flexible wall container with a handle in accordance with another embodiment of the present invention;

Fig. 19 is a schematic diagram showing in side elevation an apparatus for manufacturing a handle in accordance with the present invention;

Fig. 20 is a top plan view partly schematic showing the apparatus of Fig. 19;

Fig. 21 is a schematic diagram showing steps corresponding to the stations in Figs. 19 and 20 showing the folding and assembly sequence of a typical handle of the present invention; and

Fig. 22 is a fragmentary perspective view of a further embodiment of the present invention.

20 MODES FOR CARRYING OUT THE INVENTION

Referring to the drawings, and especially Figs. 1 and 2, a handle 10 is shown attached to a conventional, stepped end, multi-wall bag indicated generally at 13. The handle 10 comprises a bow member 12 and a bridge member 14. As can be seen, both the bow member 12 and the bridge member 14 comprise elongated portions 15 and 16 respectively, each having a first end and a second end. Extending from the first end of the bridge elongated portion 16 is a flap 17, and extending from the second end of the bridge portion 16 is a flap 18. As can be seen in Fig. 2, flaps 17 and 18 are folded to overlie the top side of the bridge elongated portion 16. The flaps 17, 18 are then attached to the underside of the bow member 12.

- 6 -

Extending from one end of the bow elongated portion 15 is an attachment panel 20, and extending from the second end of the bow elongated portion 15 is an attachment panel 21. The attachment panels 20 and 21 are attached to the side walls 13c, 13d of the bag 13, by a suitable adhesive. Preferably, the flaps 17 and 18 are attached to the underside of the bow member 12 by adhesive. In addition, the underside of the bridge elongated portion 16 can be attached to the top flaps 13a, 13b of the bag 13 by a suitable adhesive.

In operation, the hand of the person carrying the bag 13 is placed between the bow elongated portion 15 and the bridge elongated portion 16, and the bow elongated portion 15 is grasped by the hand of the person. It is important that the bow elongated portion 15 of the bow member 12 be narrow for more comfortable handling. The width of the bow elongated portion 15 would be roughly the width of conventional strap handles having approximately a width of 2 to 3 centimeters. The width of the bridge elongated portion 16 may be wider than the bow elongated portion 15 as shown, for example, in Figs. 1 and 3. On the other hand, for convenience of manufacture, the bridge elongated portion 16 may be of the same projected configuration as the bow elongated portion 15 as shown in Fig. 5 and as will be described.

Referring to Figs. 3 to 6, the numerals in these embodiments have been raised by 100 and 200 but the elements otherwise correspond to those in Figs. 1 and 2, and show slightly different embodiments of the handle. For instance, the flaps 117 and 118 in Figs. 3 and 4 are not bent over the top surface of the bridge elongated portion 16 but extend in the same plane as the bridge elongated portion 16, so that the upper surfaces of the flaps 117 and 118 are exposed to and

- 7 -

adhered to the respective portions of the bow member 112. The construction of the handle in the embodiments shown in Figs. 5 and 6 is similar to the embodiment of Figs. 3 and 4 in that the flaps 217 and 218 are in the same plane as the bridge elongated portion 216 and are adhered directly to the underside of the bow member 212. However, as previously described, the bridge elongated portion 216 is cut out in the same projected configuration as the bow elongate portion 215. As can be seen from Figs. 1 to 6, in every case the length of the bow elongated portion 215 is almost twice as long as the bridge elongated portion 16 between the respective attachment points, that is, by means of flaps 17 and 18.

As was mentioned above, the various portions can be made from a large variety of film or layer or web-like materials or string-like materials depending on the required handle strength and the type of container or surface to which the handle is to be attached. Examples of such materials are reinforced or unreinforced monofilm, woven or non-woven materials, and laminated materials comprising a plurality of layers of either the same material or different materials. As above mentioned, the monofilms can be of a plastic material. The woven materials or the materials of layers for laminated materials may comprise any natural material, such as plant fibers, e.g. wood (paper and paperboard), hemp, jute (canvases/cloths), leather, silk, etc.

The attachment of the bridge member 14, 114, 214 to the bow member 12, 112, 212 (and, if desired, to the container 13) can be carried out using one or more of a large number of known methods, depending on the materials and surfaces involved, and the strength of the attachment desired. For example, any type of

- 8 -

adhesive (hot-melt gluing, cold gluing) using any one or more of a large variety of adhesive agents (polyethylene, isocyanide 2-part glue, "Crazy" (trade mark) glue, (or any other super glues), sewing, stitching, stapling, ultrasonic seaming, pressure sensitive gluing, or laminating, can be used. Any one or more of these attaching means may be done either manually or mechanically and either after the carrier means has been constructed or during the manufacture of the carrier means.

Figs. 7 and 8 illustrate how the handle 110 of Figs. 3 and 4 could be attached to a pinch bottom bag 51. Glue is applied to attachment portions 120 and 121 of the handle 110, as shown in Fig. 8, and the handle 110 is then attached to bag 51 by pressing the attachment portions 120, 121 together against the outer ply of bag 51, as shown in Figs. 7 and 8.

Figs. 9 and 10 show how the handle 110 of Figs. 3 and 4 can be applied to the same bag 51 but on its gusseted side. As shown, the attachment panels 120 and 121 are applied with glue and are adhered to each side panel of the bag 51, as shown in Figs. 9 and 10. However, the handle is spaced such that the bridge elongated portion 116 does not directly engage the edge of the bag 51 but instead is spaced so that when the gussets are filled out, the configuration of the gusset would coincide with the bridge elongated portion 116.

Figs. 11 and 12 illustrate how the handle 110 of Figs. 3 and 4 could be attached to a stepped end bag 61, monofilm block bottom bag, or double and triple wall plastic bags. Glue is once again applied to the attachment means 120 and 121, and the handle means 110 is then attached to the bag 61 by folding the attachment portions 120 and 121 over and pressing them together against the flap-like ends 61a, 61b of bag 61,

- 9 -

as shown in perspective in Fig. 11 and in cross-section in Fig. 12.

Figs. 13 and 14 illustrate a handle 310 made from either plastic or non-plastic materials or a combination of the two which are particularly adaptable to both paper and plastic containers such as bags. In addition, the embodiment illustrated in Figs. 13 and 14 is capable of using a wide choice of gluing methods for both manual and mechanical operations. In Figs. 13 and 14, the like elements of the handle have been raised by 300. As shown, bow member 312 and bridge member 314 are made from a plastic layer laminated to a non-plastic layer, e.g., a preformed laminate. For example, layer 319 may comprise a woven or reinforced plastic material or an oriented film or cross-laminated sheet. The layer 319 is laminated to layer 323 which may comprise a layer of strong (Kraft) paper or a canvas layer by an adhesive or other laminating material. The non-plastic layer 323 comprises the underside of the attachment portions 320, 321. This may render its attachment to paper bags or other paperboard containers more adaptable.

A laminated handle 310 made from only plastic materials is particularly adaptable to plastic containers such as plastic bags. While the plastic-to-plastic attachment may make the choice of a gluing method difficult, depending on the actual materials, an isocyanide 2-part gluing method has been found to be useful.

The relative dimensions of the handle should be considered. In the embodiments of Figs. 5 and 13, the bow members 212 and 312 and bridge members 214 and 314 have a similar shape and dimensions. Once again, the central portion of both the bow portion and the bridge portion are narrow and flare outwardly at the

- 10 -

ends thereof. The bow and bridge elongated portions 215, 216, 315, 316 are a fraction of that of the lateral length of the attachment panels 220, 320, 221, 321. The lateral length of the attachment panels (that is, in the width of the handle) can be as large as the width of the area to which it is to be attached. The longitudinal length of the attachment panels (that is, in the longitudinal length of the handle) will depend on the lateral length thereof, as their product determines the carrying capacity of the handle. The length of the bridge elongated portion should normally equal the length of the top surface of the container to which the handle is attached, and the attachment panels should extend down the side walls of the container. The flaps 17, 117, 317, 217, 18, 118, 218 and 318 should be at least 1 cm. in the longitudinal axis of the bridge, and the lateral dimension should preferably be that of the attachment panels. When the flaps are longer, as in the case of Figs. 3 to 11, or when they extend to the ends of the attachment panels, these flaps become an integral part of the panel in the form of a laminate, so that they, together with the panels of the bow member, are attached to the container. It is understood that such dimensions will depend on the strength of the glue or attachment means to the container.

Should the bridge member consist of two separable layers of material, then there could be justification to peel apart a portion of the bridge portion (at each end) and (at the same ends) attach one of the peeled layers to the low portion and the other to the attachment portion. This would then tend to resist peeling forces from a greater variety of directions.

- 11 -

Another embodiment of the handle is illustrated in Figs. 15 and 16. This particular handle 410 would include a flexible bow member 412 and a bridge member 414. The flaps 417 and 418 are shown folded over the bridge elongated portion 416 and glued to the underside of the bow elongated portion 415. A pressure sensitive glue may be provided on the attachment panels 420 and 421. The pressure-sensitive adhesive may also extend onto portions of the bridge elongated portion 416, as shown in Fig. 15. Silicone paper 435 and 436 covers the pressure-sensitive adhesive in order to protect it. The silicone paper 435 and 436 overlap one another for ease of stripping. Handle 410 could be sold directly to consumers or to retail outlets for the purpose of applying the handle to any form of container or packaging, particularly packaging which involves wrapping of a retail item at point of purchase. For instance, a box 71 having rigid walls is shown in Fig. 17. The handle 410 can easily be applied to the rigid wall box 71 by stripping away the silicone paper 435 and 436 and applying pressure to the attachment panels 420 and 421 on any surface of the box.

In Fig. 18, there is shown a handle 510 having a bow member 512 made up of string-like material, such as rope made from sisalgrass or hemp or various plastic fibers. The ends of the bow elongated portion 515 would be integrated in the attachment panels, such as panel 521, and the bridge member could be a plastic sheet as in previously described embodiments. It is noted that when applying the handle to a multi-wall bag, the several sheet layers forming the wall of the bag could be laminated together at least in the area of attachment of the attachment panels. This could be done, for instance, by conventional spot pasting between the walls.

- 12 -

It will be understood that the handle can be made from any number of pieces of material as long as these pieces are connected together to form the basic assembly above described. For example, conceivably with one piece of material consisting of two layers which could be pried apart, the layers could be separated in the appropriate areas and, by cutting one layer at the appropriate point and using the cut layer as the bridge member, a handle means in accordance with the invention could be made. However, as above illustrated, the most common and preferred way of forming the handle means will be from two pieces of material, one of which forms the bow portion, with extending attachment portions, and the other of which forms the bridge portion, with extending flaps.

Referring to Figs. 19 and 20 which are, respectively, top plan and elevational views illustrating an apparatus for making a handle 10, 110, similar to that illustrated in Figures 1 to 4, 40 is a roll of material (whose width is equal to the full length of bow member 12, 112). After web 42 leaves the unwind, it passes through former bracket 43, gusset preformer disc 44 and gusset former 45, where, as shown in cross-section in Figure 21, a gusset is formed in web 42.

The web material 42 with gusset then passes through draw rolls 46 where the gusset is flattened. The web 42 then passes through die-cut roller 47 from which the width of the bow will be determined and cut. The waste pieces of web are cut out from the web 42 and discarded at this point. The web 42 proceeds through the hot melt station 48. At the same time, the bridge material web 49 unwinds from the roll 50. The web 49 passes over idler roller 51 and through a grooved creaser roller and disc combination 52. The web 49 and

- 13 -

web 42 then pass between the combining rolls 53. It is at the combining rolls where the flaps 17 and 18 will adhere to the hot melt on the web 42. The combined handle then passes through a cutting device for the purpose of separating the handles 10.

Another embodiment has been contemplated where the bridge per se would be omitted and, in fact, replaced by the flexible wall of the container to which the handle is attached. For instance, as shown in Fig. 22, the handle 610 is shown having a bow portion 615 with attachment panels 620 and 621. Panels 617 and 618 extend from the attachment panels 620 and 621 respectively beyond the ends of the bow portion 615, that is, the ends which merge into the attachment panels 620 and 621. When the handle is attached to a container, as shown in Fig. 22, the attachment panels 620 and 621 are glued to the wall of the container at spaced-apart locations, spaced such that the bow portion 615 remains bowed, that is, where the distance between the panels is less than the length of the bow portion 615. Portions of the flaps or panels 617 and 618 are also glued to the wall of the container. These panels 617 and 618, which are also partly glued to the web portion 615, serve to prevent the attachment panels 620 and 621 from being easily stripped from the wall of the package in the event of a sideways pull on the handle.

- 14 -

CLAIMS:

1. A handle means for use with a container,
said handle means comprising:
a bow member comprising an elongated portion
5 having an upper side and an under side and a first end
and a second end;
a first attachment portion extending from
the first end of said bow elongated portion and a
second attachment portion extending from the second end
10 of said bow elongated portion;
a bridge member comprising an elongated
portion having an upper side and an under side and
having a first end and a second end;
a first flap extending from said first end
15 of said bridge elongated portion and a second flap
extending from the second end of said bridge elongated
portion;
said bridge member underlying said bow
member, and said first and second flaps being attached
20 to the underside of said bow member at spaced-apart
positions of said bow portion;
whereby, in the assembled condition, the bow
elongated portion is longer than the bridge elongated
portion as determined by the respective attachments of
25 the first and second flaps to the bow member, said
first and second attachment portions being attachable
to said carrier means at spaced-apart positions,
limited by the length of the bridge member.
2. A handle means as defined in claim 1,
30 wherein said first and second flaps are attached to
said bow portion by glue.

- 15 -

3. A handle means as defined in claim 1, and including glue on the underside of said attachment portions, whereby said attachment portions are attachable to a container.

5 4. A handle means as defined in claim 1, wherein the portions of said handle means are made from a material selected from the group consisting of a film material, a web material, a layer-like material, or a string-like material, or combinations thereof.

10 5. A handle means as defined in claim 4, wherein said film material comprises a plastic material.

6. A handle means as defined in claim 4, wherein said layer-like material comprises a laminated
15 material.

7. A handle means as defined in claim 1, wherein said first flap is bent back to overlie the upper side of the bridge portion at said first end thereof and said second flap is bent back to overlie
20 the upper side of the bridge portion at the second end thereof and the flaps are attached to the bow member by an adhesive on the underside of the bow member.

8. A handle means as defined in claim 1, wherein the first flap and second flap extend in the
25 plane of the bridge member and are attached by adhesive to the underside of the bow member.

9. A handle means as defined in claim 1, wherein the bridge member and bow member have the same longitudinal axis and the attachment portions of the

- 16 -

bow member are located at each extremity of the handle means in the longitudinal axis and the attachment portions have a predetermined width dimension measured at right angles to the longitudinal axis, while the bow elongated portion has a width less than the width of the attachment portions and the bridge member has a width of the attachment members throughout the length of the bridge thereof.

10. A handle means as defined in claim 1, wherein the bridge member and bow member have a common longitudinal axis and the attachment portions of the bow member are at the extremities of the handle means in the longitudinal axis and the attachment portions have a predetermined width dimension measured at right angles to the longitudinal axis and the bow elongated portion has a width less than the width of the attachment means and the bridge elongated portion has a width corresponding to the width of the bow elongated portion.

20 11. A handle means as defined in claim 1, wherein the bow elongated portion has a length which is twice the length of the bridge elongated portion defined between said attachment of the first and second flaps to the bow member.

25 12. A handle means as defined in claim 1, wherein the bow member is a laminate including a plastic layer laminated to a non-plastic layer.

13. A handle means as defined in claim 12, wherein the plastic layer comprises a woven plastic material and the non-plastic layer is a strong Kraft paper.

- 17 -

14. A handle means as defined in claim 12, wherein the plastic layer is an oriented plastic film and the non-plastic layer is a canvas layer.

15. A handle means as defined in claim 1, wherein the handle means includes pressure-sensitive adhesive on the underside of the attachment portions and a peelable silicone paper covers the pressure-sensitive adhesive for purposes of subsequent attachment to a container.

10 16. A method of forming a handle having a bow member with attachment portions at each end thereof and a bridge member with flaps at each end thereof fastened to the underside of the bow member and the portion of the bow member between the bridge flaps being longer
15 than the corresponding bridge portion, comprising the steps of advancing a continuous web of tensile strong flexible material, forming a double gusset in the web, cutting the web into narrow strips across the gusset to form a bow member, advancing a further web of tensile
20 strong flexible material for forming the bridge member, applying the cut gusseted strips to the bridge web material with a hot melt at spaced-apart locations, cutting a bridge web against the longitudinal direction of the web to form an assembled handle.

25 17. An apparatus for forming a handle, comprising means for advancing a web of tensile strong flexible material, means forming a gusset longitudinally of the advancing web, means for flattening the gusset and diecut means for cutting the web in the lateral
30 direction of the advancing web to determine the width of the bow member of the handle, hot melt means for applying hot melt adhesive to spaced-apart portions of

- 18 -

the bow member, means for advancing a further web to come into contact with the bow members, means for combining the bridge-forming web including flap portions in engagement with the hot melt portions on the web member, and means for cutting the bridge member web for providing an assembled handle.

18. A flexible handle for use with a container, having an outer wall surface to which the handle is to be attached, the handle including a web member including a bow portion and an attachment panel at each end of the bow portion, the attachment panels each having a portion extending beyond the respective ends of the bow portion on the opposite side of the bow portion ends from the attachment panels, the attachment ends and the extension being adapted to be adhered to the outer wall surface such that the longitudinal dimension between the web portion ends is greater than the distance on the outer wall surface between bow member ends.

19. A handle and container combination comprising a container outer wall portion and a flexible handle comprising a bow member having a bow portion and attachment panels at each end of the bow portion, flaps extending from the attachment panels on the opposite side of the web portion ends respectively, and means adhering the attachment panels and portions of the flaps to the outer wall surface of the container such that a bridge is provided between the ends of the bow portion which has a longitudinal dimension which is less than the length of the bow portion between the ends thereof.

AMENDED CLAIMS

[received by the International Bureau

on 18 March 1991 (18.03.91);

original claim 16 amended; other claims unchanged (2 pages)]

14. A handle means as defined in claim 12, wherein the plastic layer is an oriented plastic film and the non-plastic layer is a canvas layer.

15. A handle means as defined in claim 1, wherein the handle means includes pressure-sensitive adhesive on the underside of the attachment portions and a peelable silicone paper covers the pressure-sensitive adhesive for purposes of subsequent attachment to a container.

10 16. A method of forming a handle having a bow member with attachment portions at each end thereof and a bridge member with flaps at each end thereof fastened to the underside of the bow member and the portion of the bow member between the bridge flaps being longer
15 than the corresponding bridge portion, comprising the steps of advancing a continuous web of tensile strong flexible material, forming a double gusset in the web, cutting the web into narrow strips across the gusset to form a bow member, advancing a further web of tensile
20 strong flexible material for forming the bridge member, applying the bow members to the bridge web with a hot melt at the attachment portions of the bow members such that the bow members are at spaced-apart locations, cutting the bridge web transversely of the longitudinal
25 direction of the web between the bow members.

17. An apparatus for forming a handle, comprising means for advancing a web of tensile strong flexible material, means forming a gusset longitudinally of the advancing web, means for flattening the gusset
30 and diecut means for cutting the web in the lateral direction of the advancing web to determine the width of the bow member of the handle, hot melt means for

- 20 -

applying hot melt adhesive to spaced-apart portions of the bow member, means for advancing a further web to come into contact with the bow members, means for combining the bridge-forming web including flap portions in engagement with the hot melt portions on the web member, and means for cutting the bridge member web for providing an assembled handle.

18. A flexible handle for use with a container, having an outer wall surface to which the handle is to be attached, the handle including a web member including a bow portion and an attachment panel at each end of the bow portion, the attachment panels each having a portion extending beyond the respective ends of the bow portion on the opposite side of the bow portion ends from the attachment panels, the attachment ends and the extension being adapted to be adhered to the outer wall surface such that the longitudinal dimension between the web portion ends is greater than the distance on the outer wall surface between bow member ends.

19. A handle and container combination comprising a container outer wall portion and a flexible handle comprising a bow member having a bow portion and attachment panels at each end of the bow portion, flaps extending from the attachment panels on the opposite side of the web portion ends respectively, and means adhering the attachment panels and portions of the flaps to the outer wall surface of the container such that a bridge is provided between the ends of the bow portion which has a longitudinal dimension which is less than the length of the bow portion between the ends thereof.

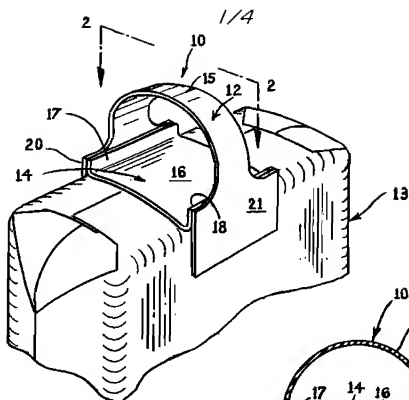


FIG. 1

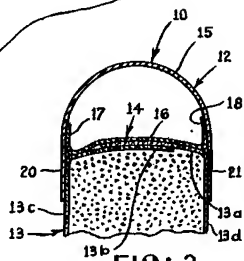


FIG. 2

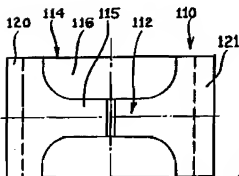


FIG. 3

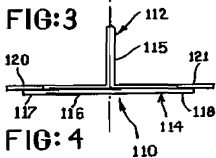


FIG. 4

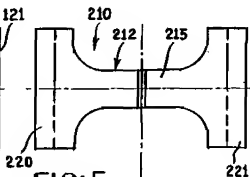


FIG. 5

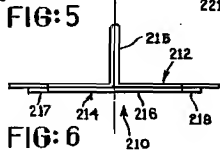
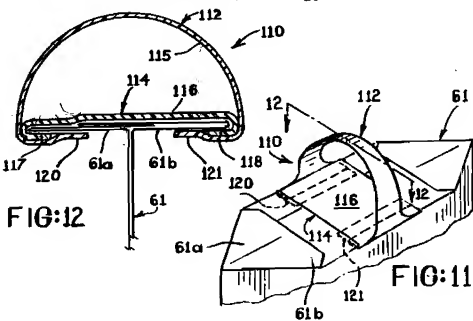
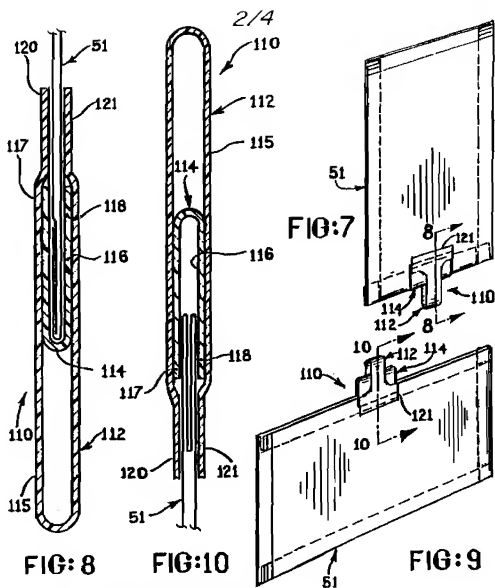
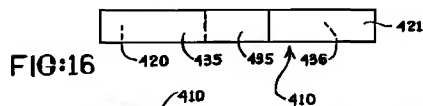
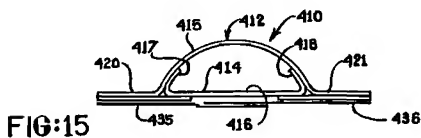
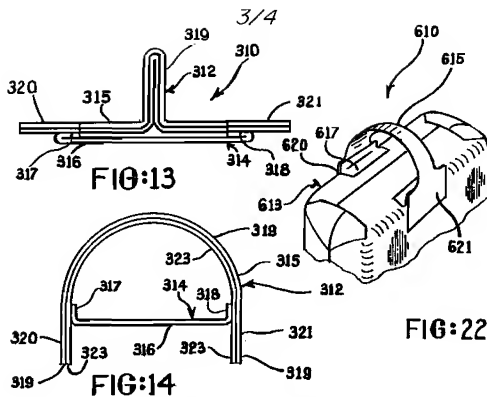
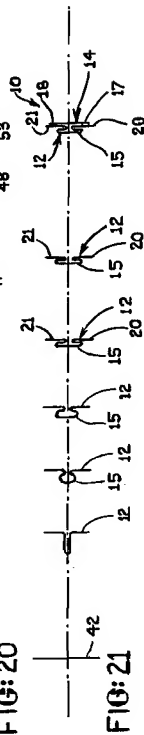
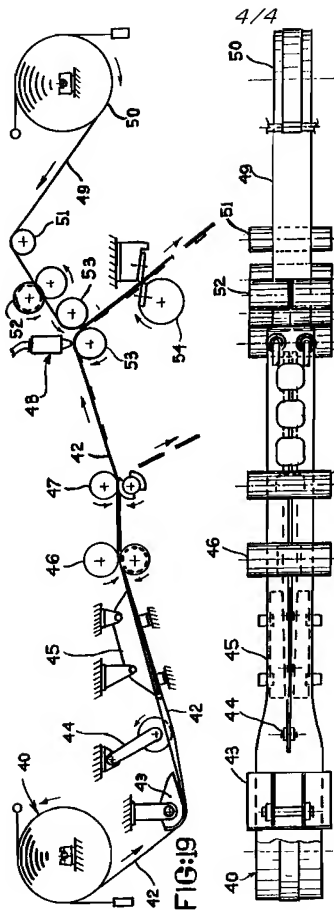


FIG. 6








INTERNATIONAL SEARCH REPORT

International Application No PCT/CA 90/00320

I. CLASSIFICATION OF SUBJECT MATTER (If several classification symbols apply, indicate all) * According to International Patent Classification (IPC) or to both National Classification and IPC IPC ⁵ : B 65 D 33/10, B 31 B 19/86		
II. FIELDS SEARCHED Minimum Documentation Searched ? Classification System : Classification Symbols IPC ⁵ : B 65 D, B 31 B, B 31 D Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched *		
III. DOCUMENTS CONSIDERED TO BE RELEVANT *		
Category *	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
A	DE, A, 3321341 (PARAMOUNT PACKAGING CORP.) 15 December 1983 see figures 1,3; page 7, line 5 - page 8, line 13; page 10, line 15 - page 11, line 3 --	1,3-6,18,19
A	DE, A, 3321808 (K.H. SENGWALD) 24 May 1984 see figures 1,2,5,7; page 9, line 23 - page 10, line 14; page 11, line 23 - page 12, line 8 --	1,3-6,18,19
A	FR, A, 1143125 (CARRY-PACK CO.) 26 September 1957 see figures 1,14-17; page 2, right-hand column, lines 26-52; page 4, left-hand column, line 4 - right-hand column, line 12; page 5, left-hand column, lines 19-31 --	16,17 -./
* Special categories of cited documents: " "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "I" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such docu- ments, such combination being obvious to a person skilled in the art "Δ" document member of the same patent family		
IV. CERTIFICATION Date of the Actual Completion of the International Search 19th December 1990 International Searching Authority EUROPEAN PATENT OFFICE Date of Mailing of this International Search Report 28 JAN 1991 Signature of Authorized Officer Mme N. KUIPER 		

III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)		
Category *	Citation of Document, ** with indication, where appropriate, of the relevant passages	Relevant to Claim No.
A	DE, A, 3622912 (K.H. SENGEWALD) 14 January 1988 see figures 1-4; column 3, lines 16-64 -----	1,3-6,16

**ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO.**

CA 9000320

SA 40305

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report. The members are as contained in the European Patent Office EDP file on 18/01/91.
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE-A- 3321341	15-12-83	US-A,B 4573203	25-02-86
		DE-U- 8317256	20-02-86
		JP-A- 59051052	24-03-84
		US-A- 4877336	31-10-89
		US-A- 4713839	15-12-87
DE-A- 3321808	24-05-84	DE-A- 3417403	14-11-85
		GB-A,B 2131392	20-06-84
		US-A- 4779996	25-10-88
		US-A- 4781474	01-11-88
FR-A- 1143125		None	
DE-A- 3622912	14-01-88	None	